STIC Search Report
EIC 2800

USPTO

STIC Database Tracking Number: 161391

TO: Juliana Kang
Location: JEF-4B85
Art Unit: 2874
Monday, August 15, 2005

Case Serial Number: 09/884463

From: Mary Mims
Location: STIC-EIC2800
JEF-4B59
Phone: 25928
Email: Mary.Mims@uspto.gov

Search Notes

Examiner Juliana Kang,

Please find attached results of your search for 09/884,463. The search was conducted using Chemical Abstracts, nonpatent abstracts, forward citation searching in Derwent Patents Citation Index, and searching in the WWW. I recommend that you review all of the attached results.

Based on this, if you have questions or would like a refocused search, please contact me.

Mary S. Mims

=> d his full CAS/STN

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     FILE 'REGISTRY' ENTERED AT 08:54:20 ON 09 AUG 2005
L1          1409 SEA ABB=ON  PLU=ON  MO S/ELF

L3          1071 SEA ABB=ON  PLU=ON  O TI/ELF
L4            14 SEA ABB=ON  PLU=ON  O TI/MF
L5          3390 SEA ABB=ON  PLU=ON  AL O/ELF

L7           657 SEA ABB=ON  PLU=ON  MG O/ELF

     FILE 'CAPLUS' ENTERED AT 08:58:06 ON 09 AUG 2005
L8         88331 SEA ABB=ON  PLU=ON  OPTIC?(2A)((FIBER OR FIBRE)OR CABLE OR
                 CORE) OR "FOC" OR "GOF" OR SILICA(2A)GLASS OR WAVE(W)GUIDE
L9         86234 SEA ABB=ON  PLU=ON  OPTIC?(2A)((FIBER OR FIBRE)OR CABLE OR
                 CORE) OR "FOC" OR "GOF" OR SILICA(2A)GLASS OR WAVE(W)GUIDE/CT
L10        14047 SEA ABB=ON  PLU=ON  (OPTIC?(2A)((FIBER OR FIBRE)OR CABLE OR
                 CORE) OR "FOC" OR "GOF" OR SILICA(2A)GLASS OR WAVE(W)GUIDE)/CT
L11        14047 SEA ABB=ON  PLU=ON  (OPTIC?(2A)(FIBER OR FIBRE OR CABLE OR
                 CORE) OR "FOC" OR "GOF" OR SILICA(2A)GLASS OR WAVE(W)GUIDE)/CT
L12        88331 SEA ABB=ON  PLU=ON  OPTIC?(2A)(FIBER OR FIBRE OR CABLE OR
                 CORE) OR "FOC" OR "GOF" OR SILICA(2A)GLASS OR WAVE(W)GUIDE
L13         1230 SEA ABB=ON  PLU=ON  (L1 OR L3 OR L4 OR L5 OR L7)(L)L12
L14         5588 SEA ABB=ON  PLU=ON  (L1 OR L3 OR L4 OR L5 OR L7)(L)L11
L15       125723 SEA ABB=ON  PLU=ON  HYDROPHIL? OR DELIQUESCENT OR DESSICANT OR
                 AMPHIPHILI? OR HUMECTAN? OR THIXOTRO? OR ((WATER OR MOISTURE)(3
                 A)(LOVING OR ATTRACT? OR AFFINITY))
L16          104 SEA ABB=ON  PLU=ON  L14 AND L15
L17      2994496 SEA ABB=ON  PLU=ON  LAYER OR COAT? OR CLAD? OR FILM OR
                 LAMINAT?
L18           78 SEA ABB=ON  PLU=ON  L16 AND L17
L19        84053 SEA ABB=ON  PLU=ON  (NANO OR SUB(W)MICRON?)(3A)(PARTICLE OR
                 POWDER OR CRYSTAL?) OR NANOPARTICLE OR NANOCRYSTAL? OR
                 NANOPOWDER
L20            2 SEA ABB=ON  PLU=ON  L18 AND L19
                 D 1-2 IBIB AB
L21        15180 SEA ABB=ON  PLU=ON  ((NANO OR SUB(W)MICRON?)(3A)(PARTICLE OR
                 POWDER OR CRYSTAL?) OR NANOPARTICLE OR NANOCRYSTAL? OR
                 NANOPOWDER)/CT
L22           24 SEA ABB=ON  PLU=ON  L21 AND L11
L23            0 SEA ABB=ON  PLU=ON  L22 AND L15
L24         1602 SEA ABB=ON  PLU=ON  L15 AND L19
L25          550 SEA ABB=ON  PLU=ON  L24 AND L17
L26          103 SEA ABB=ON  PLU=ON  (L1 OR L3 OR L4 OR  L5 OR L7)(L) L25
L27           45 SEA ABB=ON  PLU=ON  L26 AND (CERAMIC OR SILICA)
L28            0 SEA ABB=ON  PLU=ON  D 1-20 TI AB
                 D 1-45 TI AB
                 D L27 1-45 TI AB
L29           70 SEA ABB=ON  PLU=ON  (INGMAN D? OR SUHIR E?)/AU
L30            1 SEA ABB=ON  PLU=ON  (INGMAN D? AND SUHIR E?)/AU
L31            3 SEA ABB=ON  PLU=ON  L29 AND (L21 OR L19)
                 D 1-3 IBIB AB
                 D L27 9, 10, 11, 18, 19,21,23,28,29,30,32,33,. IBIB AB
L32        11456 SEA ABB=ON  PLU=ON  (L1 OR L3 OR L4 OR  L5 OR L7)(L) (L11 OR
                 L12)
L33          176 SEA ABB=ON  PLU=ON  L32 AND (L19 OR L21)
L34            2 SEA ABB=ON  PLU=ON  L33 AND L15
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L35           24 SEA ABB=ON  PLU=ON  L22 NOT L27
L36           24 SEA ABB=ON  PLU=ON  L35 NOT L31
                 D 1-24 TI AB
                 D L36 1 7 IBIB AB

     FILE 'STNGUIDE' ENTERED AT 10:48:21 ON 09 AUG 2005
L37            0 SEA ABB=ON  PLU=ON  L29 AND (L11 OR L12)

     FILE 'CAPLUS' ENTERED AT 10:58:53 ON 09 AUG 2005
                 SHOW FILES

     FILE 'STNGUIDE' ENTERED AT 10:59:10 ON 09 AUG 2005

     FILE 'CAPLUS' ENTERED AT 11:00:39 ON 09 AUG 2005
L38           16 SEA ABB=ON  PLU=ON  L29 AND (L11 OR L12)
L39           14 SEA ABB=ON  PLU=ON  L38 NOT L31
                 D 1-14 TI AB
                 D L39 2,4,5,6,13 IBIB AB
L40        64818 SEA ABB=ON  PLU=ON  G02B/IC
L41          125 SEA ABB=ON  PLU=ON  L40 AND (L19 OR L21)
L42            2 SEA ABB=ON  PLU=ON  L41 AND L15
                 D 1-2 IBIB AB
L43            0 SEA ABB=ON  PLU=ON  L41 AND MESOPOR?
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L27 ANSWER 32 OF 45 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:811823 CAPLUS
DOCUMENT NUMBER: 137:314651
TITLE: Manufacture of functional **nano-particle ceramic** carrier **layer** on metal, glass and **ceramic** surfaces
INVENTOR(S): Nonninger, Ralph; Binkle, Olaf
PATENT ASSIGNEE(S): ITN-Nanovation G.m.b.H., Germany

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
DE 10119538	A1	20021024	DE 2001-10119538		20010421
DE 10119538	C2	20030626			
WO 2002086194	A2	20021031	WO 2002-DE1453		20020419
WO 2002086194	A3	20030530			
EP 1383940	A2	20040128	EP 2002-740265		20020419
EP 1383940	B1	20050323			
CN 1503767	A	20040609	CN 2002-808537		20020419
JP 2004530045	T2	20040930	JP 2002-583704		20020419
AT 291649	E	20050415	AT 2002-740265		20020419
US 2004115416	A1	20040617	US 2003-474983		20031009
PRIORITY APPLN. INFO.:			DE 2001-10119538	A	20010421
			WO 2002-DE1453	W	20020419

AB The procedure is disclosed for the production of porous **ceramic layers** serving as carrier **layer** on metallic, **ceramic**, enamelled or glass substrates using **crystalline nano-particles** with **particle** sizes between 3-100 nm over a wet-chemical process, as well as functionalizing this porous **ceramic layer** by bringing a second component into the pores. **Nanopowders** of alumina, zirconia, YSZ, TiO_2, boehmite, and iron oxide are used to form the porous **ceramic layers.** The porous, **ceramic layers** can be filled with a water repellent (e.g., fluorosilane), **hydrophilic** agent, degreasing agent, and corrosion inhibitor, be remained those in the substrate and/or delivered subsequently if necessary or be loaded with bactericides, aromas, perfumes, or inhalation materials, which are transferred targeted proportioned to the room air. For example, a suspension of **nanopowder** of yttria-stabilized zirconia or titania with trioxadecanoic acid in polyvinyl alc. is deposited on a steel or Al substrate as a transparent **layer**, dried, and sintered for 1 h at 500° to form the porous **ceramic layer** on steel. The resulting articles having the porous carrier **ceramic layers** are suitable in medical instruments and devices.

L39 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:850118 CAPLUS
DOCUMENT NUMBER: 137:330933
TITLE: Coated **optical** glass **fiber**
INVENTOR(S): **Suhir, Ephraim**
PATENT ASSIGNEE(S): Lucent Technologies, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002164141	A1	20021107	US 2001-798031	20010228
US 6647195	B2	20031111		

PRIORITY APPLN. INFO.: US 2001-798031 20010228

AB A multi-material coated **optical fiber** is described comprising at least two portions adjacent in a longitudinal direction, wherein adjacent portions are comprised of different materials having different Young's moduli. A method of fabricating the multi-material coated **optical fiber** is also described entailing coating a first portion of the **optical fiber** with a first material; and coating a second portion of the **optical fiber** adjacent to the first portion with a second material different from that of the first portion; wherein the first portion material has a lower Young's modulus than that of the second portion material. A telecommunications system using the multi-material coated fibers is also described.

L39 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:875276 CAPLUS
DOCUMENT NUMBER: 136:12635
TITLE: Interconnected optical devices having enhanced reliability
INVENTOR(S): **Suhir, Ephraim**
PATENT ASSIGNEE(S): Agere Systems Optoelectronics Guardian Corp., USA
SOURCE: U.S., 48 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6327411	B1	20011204	US 1999-357457	19990720

PRIORITY APPLN. INFO.: US 1999-357457 19990720

AB **Fiber** interconnected **optical** devices comprising first and second optical device components, a hollow tube attached to and extending between the first and second components, and a length of **optical fiber** disposed within the hollow tube and optically coupling the first and second components in which the **optical fiber** is a polymer-coated glass fiber are described in which the thickness of the polymer coating is chosen to prevent buckling and subsequent bending of **optical** interconnection **fiber** based on the properties of the fiber and tube materials and the thermal history of the device.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:754799 CAPLUS

DOCUMENT NUMBER: 136:28228

TITLE: Thermal stress in a polymer-coated **optical** glass **fiber** with a low-modulus coating at the ends

AUTHOR(S): **Suhir, E.**

CORPORATE SOURCE: Bell Laboratories, Lucent Technologies, Inc., Murray Hill, NJ, 07974, USA

SOURCE: Journal of Materials Research (2001), 16(10), 2996-3004

CODEN: JMREEE; ISSN: 0884-2914

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A polymer-coated glass fiber with a low-modulus coating at the ends is considered. The objective of the anal. is to find out if there is sufficient incentive to use such a dual coating system for lower interfacial thermally induced stresses. These are due to the different coeffs. of thermal expansion (contraction) of the dissimilar materials in the trimaterial structure. The study is restricted to the evaluation of the shearing stresses only and is based on a simplified strength-of-materials model, rather than on a rigorous theory-of-elasticity method. Such a approach seems to be justified, since the most accurate predictions of the magnitude and the distribution of the induced stresses are beyond the scope of this anal. From the calculated data, there is a definite incentive for employing a bimaterial coating system, in which conventional (high modulus) polymeric material is used in the midportion of the fiber, while a low-modulus material (typically, with a higher coefficient of expansion) is applied at its ends. Such a system could be recommended, when there is a need to bring down the interfacial stresses, and the possible increase in the manufacturing cost is not viewed as an obstacle.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:562048 CAPLUS
DOCUMENT NUMBER: 135:156328
TITLE: Structural mechanics of polymer coated **optical** glass **fibers**: Review
AUTHOR(S): **Suhir, E.**
CORPORATE SOURCE: Bell Laboratories, Lucent Technologies, Inc., USA
SOURCE: Annual Technical Conference - Society of Plastics Engineers (2001), 59th(Vol. 2), 1344-1348
CODEN: ACPED4; ISSN: 0272-5223
PUBLISHER: Society of Plastics Engineers
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review and discussion, with 77 refs., of the state-of-the-art in the stress-strain anal. (structural mechanics) of polymer coated **optical** glass **fibers**, with an emphasis on the anal. modeling.

REFERENCE COUNT: 80 THERE ARE 80 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/797,457

L39 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:562067 CAPLUS

DOCUMENT NUMBER: 113:162067

TITLE: Mechanical approach to the evaluation of the low temperature threshold of added transmission losses in single-coated **optical fibers**

AUTHOR(S): **Suhir, Ephraim**

CORPORATE SOURCE: AT and T Bell Lab., Murray Hill, NJ, 07974, USA

SOURCE: Journal of Lightwave Technology (1990), 8(6), 863-8
CODEN: JLTEDG; ISSN: 0733-8724

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An easy-to-use method is developed for the evaluation of thermally induced forces in single-coated **optical fibers**. Calcns. show that the increase in the lateral pressure at the cladding/coating interface adequately reflects the exptl. observed increase in the added transmission losses at low temps. The measurements were carried out on loose fibers in a test chamber, where mech. effects other than the thermally induced shrinkage of the coating were thought to be excluded. It is suggested that the thermally induced lateral pressure be used as a tentative criterion of the low temperature threshold of the expected added optical losses in single-coated fibers. Obviously, the increase in this pressure reflects the increase in the axial thermal loading as well. Single-coated **optical fibers** can be successfully employed in transmission media operated at moderately low temps. (for instance, in undersea systems), otherwise a dual-coated fiber design should be considered. The final selection of the most feasible coating design must be based, of course, on all the material, optical, chemical, technol., mech., environmental, and cost considerations.

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L27 ANSWER 28 OF 45 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:300285 CAPLUS
DOCUMENT NUMBER: 138:294849
TITLE: Gelatin nanocomposites
INVENTOR(S): Siegel, Richard W.; Schadler, Linda S.; Li, Tao; Mendel, John; Irvin, Glen C.
PATENT ASSIGNEE(S): Rensselaer Polytechnic Institute, USA

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2003070583	A1	20030417	US 2001-976252		20011012
US 6783805	B2	20040831			
WO 2003032083	A2	20030417	WO 2002-US32929		20021015
WO 2003032083	A3	20030925			
PRIORITY APPLN. INFO.:			US 2001-976252	A	20011012

AB Scratch-resistant nanocomposite materials contain at least one **film**-forming **hydrophilic** colloid and at least one **ceramic nanoparticle** material. In particular, the **film**-forming **hydrophilic** colloid may be a gelatin, and the **ceramic nanoparticle** material may be alumina. In another aspect, the invention relates to scratch-resistant imaging elements comprising a support and a **layer** comprising such a nanocomposite material. The nanocomposite **layer** may be employed as an imaging **layer**, or as a protective **layer** disposed between an imagining **layer** and the environment.

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  File   2:INSPEC 1969-2005/Jul W5

  File   6:NTIS 1964-2005/Jul W5

  File   8:Ei Compendex(R) 1970-2005/Jul W5

  File  34:SciSearch(R) Cited Ref Sci 1990-2005/Jul W5

  File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

  File  94:JICST-EPlus 1985-2005/Jun W3

  File  99:Wilson Appl. Sci & Tech Abs 1983-2005/Jul

  File 315:ChemEng & Biotec Abs 1970-2005/Jul

  File 144:Pascal 1973-2005/Jul W5

  File 305:Analytical Abstracts 1980-2005/Jul W5

  File  23:CSA Technology Research Database 1963-2005/Jul
S4     436239   OPTIC?(2N)(FIBER? ? OR FIBRE? ? OR CABLE? ? OR CORE? ?) OR
             FOC OR GOF OR WAVE(N)GUIDE? ?
S5     113846   (NANO OR SUB(N)MICRON? ?)(3N)(PARTIC? OR POWDER??? OR CRYS-
             TAL??????) OR NANOPARTIC????? OR NANO CRYSTAL????? OR NANOPOW-
             DER? ?
S6    5272260   LAYER????? OR COAT??? OR CLAD???? OR FILM? ? OR LAMINAT????
S7     126559   HYDROPHIL?????? OR DELIQUESCENT??? OR THIXOTRO????? OR AMP-
             HIPHILI????? OR DESSICANT OR ((WATER OR MOISTURE)(3N)(LOVING -
             OR ATTRACT????? OR AFFINITY))
S8    1003330   CERAMIC OR SILICA OR MOLYBDENUM(N)DISULFIDE OR (TITANIUM OR
              ALUMINUM OR MAGNESIUM)(N)OXIDE
S9          5   S4 AND S5 AND S7
S10       493   S4 AND S5
S11     10384   S6(7N)S7
S12        63   S4 AND S11
S13        17   S12 AND S8
S14         9   RD (unique items)
S15       107   S10 AND S8
S16         0   S15 AND S11
S17       107   S15 AND S5
S18        56   S17 AND S6
S19        42   RD (unique items)
S20        42   S19 NOT S14
S21        42   S20 NOT S9
S22         0   AU='INGMAN D' AND 34
S23        61   AU='INGMAN D' OR AU='INGMAN DOV'
S24    433726   AU='SUHIR E' OR AU='SUHIR, EPHRAIM' OR AU='SUHIR, E' OR 36
S25       455   AU='SUHIR E' OR AU='SUHIR, EPHRAIM' OR AU='SUHIR, E' OR AU-
             ='SUHIR, E.'
S26       516   S23 OR S25
S27       174   S26 AND S4
S28         2   S27 AND S5
S29         1   RD (unique items)
S30       107   S27 AND S6
S31        14   S30 AND S8
S32        14   S31 NOT S29
S33        14   S32 NOT S21
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S34 4 RD (unique items)

21/5/7 (Item 7 from file: 2)
DIALOG(R)File 2:INSPEC

6845034 INSPEC Abstract Number: A2001-06-6860-037
Title: Surface analysis of nanostructured ceramic coatings containing silicon carbide nanoparticles produced by plasma modulation chemical vapour deposition
Author(s): Bertran, E.; Viera, G.; Martinez, E.; Esteve, Y.; Maniette, Y. ; Farjas, J.; Roura, P.
Author Affiliation: Dept. de Fisica Aplicada i Opt., Barcelona Univ., Spain
Journal: Thin Solid Films Conference Title: Thin Solid Films (Switzerland) vol.377-378 p.495-500
Publisher: Elsevier,
Publication Date: 1 Dec. 2000 Country of Publication: Switzerland
CODEN: THSFAP ISSN: 0040-6090
SICI: 0040-6090(20001201)377/378L.495:SANC;1-B
Material Identity Number: T070-2001-001
U.S. Copyright Clearance Center Code: 0040-6090/2000/$20.00
Conference Title: 27th International Conference on Metallurgical Coatings and Thin Films
Conference Date: 10-14 April 2000 Conference Location: San Diego, CA, USA
Document Number: S0040-6090(00)01374-2
Language: English Document Type: Conference Paper (PA); Journal Paper (JP)
Treatment: Experimental (X)
Abstract: Ceramic nanometric multilayer structures of nanostructured particles of SiC/sub x/:H layers and amorphous Si films were obtained by chemical vapour deposition using modulated rf plasma. This technology has been extensively used for producing ceramic Si-based nanoparticles (SiC/sub x/N/sub y/) with unique characteristics including spherical morphology, composition and controlled ultrafine particle size in the range 2-100 nm. Hybrid multilayer nanostructures of ceramic coatings containing Si and SiC were produced to study their structural, mechanical and surface properties. Low densities of crystalline nanoparticles were embedded in a-Si matrix during the growth of these structures and they were intercalated between amorphous Si layers. The phase structure, microstructure and morphology of the hybrid multilayered films were examined by transmission electron microscopy and selected area electron diffraction, which revealed the presence and distribution of the nanoparticles in the multilayered structure of the films. The hardness and Young's modulus were measured by the nanoindentation technique, and the wear properties were evaluated using an improved pin-on-disc system. These results showed that the mechanical properties of the films (hardness, friction, propagation of cracks and wear resistance) were notably enhanced by the presence of the nanoparticles. Potential applications of these coatings based on ceramic multilayers include the production of tough and hard coatings, protective and wear-resistant coatings for mechanical tools, gears and mechanical parts, optical surfaces and fibres, corrosion and high temperature-resistant coatings, as well as inorganic membranes, buffer layers for heterogeneous coatings, and coatings with anisotropic properties. (16 Refs)
Subfile: A
Descriptors: ceramics; crystal morphology; electron diffraction; friction ; hardness; nanostructured materials; plasma CVD coatings; silicon compounds; surface topography; transmission electron microscopy; wear; wear resistant coatings; Young's modulus

21/5/24 (Item 13 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

07159558 Genuine Article#: 130LG Number of References: 28
Title: Ion implantation as a tool in the synthesis of practical third-order nonlinear optical materials
Author(s): Haglund RF (REPRINT)
Corporate Source: VANDERBILT UNIV,DEPT PHYS & ASTRON/NASHVILLE//TN/37235 (REPRINT)
Journal: MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING, 1998, V253, N1-2 (SEP 30), P 275-283
ISSN: 0921-5093 Publication date: 19980930
Publisher: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE, SWITZERLAND
Language: English Document Type: ARTICLE
Geographic Location: USA
Subfile: CC PHYS--Current Contents, Physical, Chemical & Earth Sciences; CC ENGI--Current Contents, Engineering, Computing & Technology
Journal Subject Category: MATERIALS SCIENCE
Abstract: It is now well-established that metal nanocrystal composites with attractive third-order nonlinear optical properties can be synthesized in various dielectric hosts by ion implantation, ion exchange, sol-gel processes, sputtering, and pulsed-laser deposition. Whether these are appropriate to make practical all-optical switching and wave-guiding devices remains to be seen; however; in particular, techniques for the fabrication of simple device structures based on these materials are largely unexplored. This paper reviews the optical physics of the third-order nonlinearity in metal nanocrystal composites, to illustrate how material parameters of both quantum dots and host matrix affect the optical nonlinearities. The figures of merit that characterize simple building blocks-such as wave-guide resonators and directional couplers-for all-optical switching circuits are discussed. Novel ways of using ion implantation to enhance the properties of layered nanocluster and nanocrystalline materials are considered, particularly those that complement techniques for building up optical heterostructures, such as ion exchange, sputtering and pulsed-laser deposition. (C) 1998 Elsevier Science S.A. All rights reserved.
Descriptors--Author Keywords: ion beam processing ; nonlinear optics ; quantum dots ; all-optical switching ; ion exchange ; laser annealing
Identifiers--KeyWord Plus(R): QUANTUM WELL; SILICA; GLASSES; COPPER; NANOPARTICLES; PARTICLES; COLLOIDS; FILMS

21/5/26 (Item 15 from file: 34)

06313181 Genuine Article#: YH747 Number of References: 41
Title: Microstructural and optical properties of sol-gel silica-titania waveguides
Author(s): Brusatin G; Guglielmi M; Innocenzi P (REPRINT) ; Martucci A; Battaglin C; Pelli S; Righini G
Corporate Source: UNIV PADUA,DIPARTIMENTO INGN MECCAN, SEZ MAT, VIA MARZOLO 9/I-35131 PADUA//ITALY/ (REPRINT); UNIV PADUA,DIPARTIMENTO INGN MECCAN, SEZ MAT/I-35131 PADUA//ITALY/; UNIV VENICE,DIPARTIMENTO CHIM FIS/I-30123 VENICE//ITALY/; CNR,IST RIC ONDE ELETTROMAGNET/I-50127 FLORENCE//ITALY/
Journal: JOURNAL OF NON-CRYSTALLINE SOLIDS, 1997, V220, N2-3 (NOV), P 202-209
ISSN: 0022-3093 Publication date: 19971100
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Language: English Document Type: ARTICLE
Geographic Location: ITALY
Subfile: CC PHYS--Current Contents, Physical, Chemical & Earth Sciences
Journal Subject Category: MATERIALS SCIENCE, CERAMICS
Abstract: Two micron silica-titania coatings made by single step sol-gel dip-coating were prepared as planar waveguides. Acid catalyzed solutions of methyltriethoxysilane (MTES) mixed with tetraethoxysilane (TEOS) and tetrabutoxytitanate were used as precursors. Purely inorganic and crackfree silica-titania coatings were obtained after annealing at 500 degrees C. The waveguides had propagation losses, 0.3 dB/cm, of the same order as thin silica-titania films prepared without MTES, Films were studied by infrared spectroscopy, Rutherford backscattering spectrometry, nuclear reactions analysis and elastic recoil detection analysis. The waveguide structural composition after annealing at 500 degrees C was found to be similar to MTES and TEOS derived silica-titania coatings. The waveguides were characterized by measuring refractive index, porosity and shrinkage, with thermal treatment. The MTES derived films showed a higher shrinkage during annealing but the same refractive index and porosity as the TEOS derived waveguides. (C) 1997 Elsevier Science B.V.
Identifiers--KeyWord Plus(R): INFRARED-REFLECTANCE SPECTRA; WAVE-GUIDES; SIO2-TIO2; COATINGS; SPECTROSCOPY; GLASSES; FILMS
Research Fronts: 95-1003 001 (SEMICONDUCTOR QUANTUM DOTS; TIO2 SURFACES; CDS NANOCRYSTALS; OPTICAL NONLINEARITY; BOROSILICATE GLASS; WANNIER EXCITONS)
95-3193 001 (VOLATILE METAL ALKOXIDES; BARIUM COMPLEXES; X-RAY CRYSTAL-STRUCTURES; HETEROMETALLIC PRECURSORS; ESTER ELIMINATION; PROTEIN-DOPED SOL-GEL SIO2 THIN-FILMS)
95-4139 001 (SPUTTERED IRON NITRIDE FILMS; RUTHERFORD BACKSCATTERING ANALYSES; NITROGEN-IMPLANTED ALPHA-FE)
95-5404 001 (SILICA SURFACES; ADSORBED MOLECULES; CO ADSORPTION; DECOMPOSITION OF NITROUS-OXIDE; SUPPORTING MATERIAL; IR SPECTROSCOPY; ZIRCONIA NANOPARTICLES)

21/5/28 (Item 17 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06014029 Genuine Article#: XP279 Number of References: 25
Title: TiO_2 nano-particle-dispersed polyimide composite optical waveguide materials through reverse micelles
Author(s): Yoshida M; Lal M; Kumar ND; Prasad PN (REPRINT)
Corporate Source: SUNY ALBANY,DEPT CHEM, PHOTON RES LAB, 427 NSM COMPLEX/BUFFALO//NY/14260 (REPRINT); SUNY ALBANY,DEPT CHEM, PHOTON RES LAB/BUFFALO//NY/14260; IMRA AMER INC,/ANN ARBOR//MI/48105
Journal: JOURNAL OF MATERIALS SCIENCE, 1997, V32, N15 (AUG 1), P4047-4051
ISSN: 0022-2461 Publication date: 19970801
Publisher: CHAPMAN HALL LTD, 2-6 BOUNDARY ROW, LONDON, ENGLAND SE1 8HN
Language: English Document Type: ARTICLE
Geographic Location: USA
Subfile: CC PHYS--Current Contents, Physical, Chemical & Earth Sciences; CC ENGI--Current Contents, Engineering, Computing & Technology
Journal Subject Category: MATERIALS SCIENCE
Abstract: Optically transparent polyimide:titanium dioxide (TiO_2) composite waveguide materials were prepared by the dispersion of nano-sized TiO_2 particles into polyimide. The particles were produced through reverse micelles using the sol-gel method, and were dispersed into the fluorinated polyimide solution. The solution was coated on a glass substrate, and a polyimide : TiO_2 composite waveguide (4 wt % TiO_2 concentration) was successfully produced after the heat treatment. Because the particle size was very small, no noticeable scattering loss was observed in the resultant slab waveguide. The measured optical propagation loss at 633 nm was 1.4 dB cm(-1). It is equivalent to that of the pure polyimide, and the refractive index was increased from 1.550 to 1.560 by the incorporation.
Identifiers--KeyWord Plus(R): SOL-GEL PROCESS; CDS CLUSTERS; WAVE-GUIDES; SILICA; GROWTH; FILMS; SIZE

34/5/4 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

04265464 INSPEC Abstract Number: A9223-8140L-027, B9212-4125-004
Title: Elastic stability, free vibrations, and bending of optical glass fibers: effect of the nonlinear stress-strain relationship
Author(s): Suhir, E.
Author Affiliation: AT&T Bell Lab., Murray Hill, NJ, USA
Journal: Applied Optics vol.31, no.24 p.5080-5
Publication Date: 20 Aug. 1992 Country of Publication: USA
CODEN: APOPAI ISSN: 0003-6935
U.S. Copyright Clearance Center Code: 0003-6935/92/245080-06$05.00/0
Language: English Document Type: Journal Paper (JP)
Treatment: Theoretical (T); Experimental (X)
Abstract: The author evaluates the effect of the nonlinear stress-strain relationship on elastic stability, free vibrations, and bending of optical glass fibers. The analysis is carried out under an assumption that this relationship, obtained for the case of uniaxial tension is also valid in the case of compression, and is applicable to bending deformations as well. The author examines low-temperature microbending of infinitely long dual-coated fibers, elastic stability of short bare fibers, free vibrations of long fused portions of light-wave couplers that are subjected to uniaxial tension, and bending deformations of optical fibers that experience large deflections. The author concludes that the nonlinear stress-strain relationship in silica materials can have a significant effect on the mechanical behavior of optical fibers and that, since the experimental data were obtained for tensile strains not exceeding 5%, future experimental research should include evaluation of the nonlinear stress-strain relationship, both in tension and compression, for higher strains and for high-strength fibers (such as, for instance, fibers protected by metallic coatings). (16 Refs)
Subfile: A B
Descriptors: bending; elastic deformation; mechanical stability; optical fibres; plastic deformation; stress-strain relations; vibrations
Identifiers: free vibrations; optical glass fibers; nonlinear stress-strain relationship; elastic stability; uniaxial tension; compression; bending deformations; low-temperature microbending; infinitely long dual-coated fibers; short bare fibers; long fused portions; light-wave couplers; large deflections; mechanical behavior; SiO/sub 2/ materials
Class Codes: A8140L (Deformation, plasticity and creep); A6220F (Deformation and plasticity); A8140J (Elasticity and anelasticity); A4630L (Buckling and instability); A4281C (Fibre testing and measurement of fibre parameters); B4125 (Fibre optics)
Chemical Indexing:
SiO2 bin - O2 bin - Si bin - O bin (Elements - 2)

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L45          36 SEA ABB=ON  PLU=ON  L36
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L51             0 SEA ABB=ON  PLU=ON  L50 AND L47
L52            11 SEA ABB=ON  PLU=ON  L48 AND PRY>2001
L53             2 SEA ABB=ON  PLU=ON  L48 NOT L52
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L54           147 SEA ABB=ON  PLU=ON  L46 NOT L49
L55             2 SEA ABB=ON  PLU=ON  L54 AND L47
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                 OR DESSICANT OR AMPHIPHIL? OR HUMECTAN? OR THIXOTRO? OR
                 ((WATER OR MOISTURE)(3A)(LOVING OR ATTRACT? OR AFFINITY)) OR
                 MESOCRYST? OR MESOPOR?
L57             9 SEA ABB=ON  PLU=ON  L46 AND L56
                 D 1-9 IBIB AB
L58             6 SEA ABB=ON  PLU=ON  L56 AND L54
L59       6949927 SEA ABB=ON  PLU=ON  ?LAYER? OR ?COAT? OR ?CLAD? OR FILM OR
                 LAMINAT?
L60        257851 SEA ABB=ON  PLU=ON  OPTIC?(2A)(FIBER OR FIBRE OR CABLE OR
                 CORE) OR FOC OR GOF OR WAVE(W) GUIDE
L61         34727 SEA ABB=ON  PLU=ON  L59(5A) L60
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L64            35 SEA ABB=ON  PLU=ON  L63 NOT L50
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L66             0 SEA ABB=ON  PLU=ON  L65 AND L47
                 D L65 IBIB AB 1-34
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L65 ANSWER 1 OF 34 WPIX

ACCESSION NUMBER: 2001-465221 [50] WPIX
DOC. NO. NON-CPI: N2001-345080
DOC. NO. CPI: C2001-140455
TITLE: Optical fiber cable with plug.
DERWENT CLASS: A89 L03 P81 V07
INVENTOR(S): KITAYAMA, T; KUBO, H; NAKAMURA, K; OKUMURA, J; SHIMADA, K; YAMAMOTO, T
PATENT ASSIGNEE(S): (MITR) MITSUBISHI RAYON CO LTD
COUNTRY COUNT: 30
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001048526	A1	20010705	(200150)*	JA	38
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR					
W: CN JP KR US					
EP 1174746	A1	20020123	(200214)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
KR 2001113717	A	20011228	(200240)		
CN 1342270	A	20020327	(200247)		
US 6453104	B1	20020917	(200264)		
JP 2003075692	A	20030312	(200328)		13
US 2003072546	A1	20030417	(200329)		
JP 2001549120	X	20030610	(200339)		
US 6584256	B2	20030624	(200343)		
KR 396106	B	20030829	(200413)		

PRIORITY APPLN. INFO: **JP 1999-374911 19991228**

AB WO 200148526 A UPAB: 20030919
NOVELTY - Optical fiber cable has a diameter of D1 (mm) and comprises an adhesion layer 0.5 to 200 mu in thickness, a primary coating layer, and a secondary coating layer, all sequentially formed on the outer circumference of an **optical fiber** constituted on the outermost **layer** by vinylidene fluoride polymer.

DETAILED DESCRIPTION - D1/D2 = 1.2 to 3.5 (the diameter of the optical fiber is Da (mm), the thickness of the adhesion layer d (mm), and Da + 2d =D2); and an optical fiber cable with a plug using this optical fiber. Optical fiber may consist of a core, a sheath formed on the periphery of the core and a protection layer formed on the periphery of the sheath.

USE - None given.

ADVANTAGE - Optical fiber cable have improved flame resistance, difficult in separating an **optical fiber** from **coating layers**, and not likely to cause a pistoning phenomenon.

L65 ANSWER 3 OF 34 WPIX

ACCESSION NUMBER: 2000-365763 [31] WPIX
DOC. NO. NON-CPI: N2000-273666
DOC. NO. CPI: C2000-110578
TITLE: Formation of optical fiber used as, e.g., Faraday rotators and stress sensors by drawing fiber from preform having glass **core coated** with **optically** active particulate material and glass **cladding** laid on the coated glass core.
DERWENT CLASS: L01 P81 V07
INVENTOR(S): FLATTERY, J; KELLER, D V; KORNREICH, P G
PATENT ASSIGNEE(S): (UYSY-N) UNIV SYRACUSE
COUNTRY COUNT: 22
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000026711	A1	20000511	(200031)*	EN	19
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
W: CA JP KR					
US 6072930	A	20000606	(200033)		

PRIORITY APPLN. INFO: **US 1998-186309 19981104**

AB WO 200026711 A UPAB: 20000630
NOVELTY - An optical fiber is formed by drawing a fiber from a preform having a glass core coated with an optically active particulate material (12) and a glass cladding laid on the coated glass core.

DETAILED DESCRIPTION - Formation of an optical fiber includes drawing a fiber from a preform having a glass core coated with an optically active particulate material and a glass cladding laid on the coated glass core. The particulate material has a flow property that is equal to or less than the viscosity of the glass core material. The cladding material has a viscosity that overlaps the viscosity of the core material. An INDEPENDENT CLAIM is also included for the optical fiber formed by the method.

USE - For fabricating optical fibers used as, e.g., Faraday rotators and stress sensors.

ADVANTAGE - The method assures coherency, continuity and homogeneity of the film layer as the fibers are drawn from the preform.

DESCRIPTION OF DRAWING(S) - The drawing shows a partially broken way perspective view of preform of the optical fiber.

optically active particulate material 12

L65 ANSWER 7 OF 34 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1996-435799 [44] WPIX
DOC. NO. NON-CPI: N1996-367209
DOC. NO. CPI: C1996-136814
TITLE: Corrosion resistant **optical fibres** - include a core **cladding** assembly surrounded by a thin quasi metal oxide film and exhibit improved mechanical performance.
DERWENT CLASS: E12 L01 P81 V07
INVENTOR(S): CHAN, M G; INNISS, D; KATZ, H E; KUCK, V J; SCHILLING, M L
PATENT ASSIGNEE(S): (AMTT) AT & T CORP; (AMTT) AMERICAN TELEPHONE & TELEGRAPH CO; (LUCE) LUCENT TECHNOLOGIES INC
COUNTRY COUNT: 6
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 735395	A2	19961002	(199644)*	EN	17
R: DE FR GB NL					
JP 08271769	A	19961018	(199701)		11
EP 735395	A3	19970205	(199715)		
US 5904983	A	19990518	(199927)		

PRIORITY APPLN. INFO: **US 1995-412787 19950329; US 1997-862403 19970523**

AB EP 735395 A UPAB: 19961104
An article containing oxide material and silica less than 2 mm in at least one direction, comprising a quasi metal oxide layer less than 5mum in thickness, deposited on the outer surface of the article to protect it against or retard corrosion.

Also claimed are (1) an optical article, e.g. an optical fibre comprising: (a) a core; (b) a cladding surrounding the core, with an outer surface; and (c) an organo-metallic cpd. based layer of formula (I) deposited on the article and reactive with the outer surface of it;
M:R(n) (I)

M = titanium ,zirconium, hafnium, aluminium, tin, zinc, lead or bismuth; R = 1-12C alkoxide ligand coordinated to the metal; n = 1-4; (2) fibre optic cable comprising a plurality of fibres and a filling material cpd. having quasi metal oxide components.

USE - The articles are, e.g. fibres, ferrules, optical connectors and optical fibres (claimed).

ADVANTAGE - Treated fibres show no evidence of pit holes or channels when subjected to highly accelerated temperature and humidity test stress test system (HAST) and retain more of their pre-aged mechanical strength than untreated or silane treated fibres.

L65 ANSWER 10 OF 34 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1995-320515 [41] WPIX
DOC. NO. NON-CPI: N1995-241107
DOC. NO. CPI: C1995-142375
TITLE: Radiation-curable coating compsn. for a glass substrate - comprises polymers, oligomers or monomers and a polysiloxane.
DERWENT CLASS: A25 A26 A89 G02 L01 V07
INVENTOR(S): SZUM, D M
PATENT ASSIGNEE(S): (STAM) DSM NV; (STAM) DSM DESOTECH INC
COUNTRY COUNT: 20
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9523772	A1	19950908	(199541)*	EN	27
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
W: AU CA JP					
AU 9517191	A	19950918	(199551)		
US 5502145	A	19960326	(199618)		6
EP 748301	A1	19961218	(199704)	EN	
R: BE DE DK FR GB IT NL SE					
US 5595820	A	19970121	(199710)		7
JP 09509642	W	19970930	(199749)		23
AU 693856	B	19980709	(199838)		

PRIORITY APPLN. INFO: **US 1994-204993 19940302; US 1995-484650 19950607**

AB WO 9523772 A UPAB: 19951019
A radiation-curable coating compsn. for a glass substrate comprises a component(s) selected from radiation curable polymers, oligomers and monomers; and a poly(siloxane) of formula (I). In the formula,Y,Z = halogen, amino, alkyl or alkoxy; n = 1 or more; and X1,X2, X3 or X4 = an hydrolysable gp. hydrolysed from (I) in the presence of H_2O.

Also claimed are the following: (1) a glass substrate coated with a compsn(s); (2) a **coated optical fibre coated** with no more than one layer in which the inner layer is a poly(siloxane) and one of the other layers is an acid functional monomer; (3) a **coated optical fibre** in which the inner **layer** is a poly(siloxane) and one of the other layers is a poly(siloxane); (4) a matrix material of the described compsn.; and (5) an **optical fibre** ribbon comprising a **coated optical fibre**(s) embedded in a cured matrix material.

Preferably in (I), X1,X2,X3 and X4 = (m)ethoxy gps..

The compsn. contains a UV radiation-curable ethylenically unsatd. oligomer which is the reaction prod. of an hydroxy functional monomer containing ethylenic unsaturation, an isocyanate which is further reacted with an hydroxy functional polyether.

USE - The compsn. can be used on glass objects such as bottles, light bulbs, windows. The pref. use is for a silica-based optical fibre.

ADVANTAGE - The addition of a poly(siloxane) to the compsn. delays glass strength deterioration, provides wet adhesion of the coating to a substrate and improves adhesion between adjacent coating layers which both contain a poly(siloxane).

L65 ANSWER 12 OF 34 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1995-224267 [29] WPIX
DOC. NO. CPI: C1995-103158
TITLE: Curable **coatings** for **optical fibres** - containing tetra substd. silicon, titanium or zirconium cpd. adhesion with good retention.
DERWENT CLASS: A23 A92 A94 G02 L01
INVENTOR(S): SZUM, D M
PATENT ASSIGNEE(S): (STAM) DSM NV; (SZUM-I) SZUM D M; (STAM) DSM DESOTECH INC
COUNTRY COUNT: 20
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9515928	A1	19950615	(199529)*	EN	36
RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
W: AU CA JP					
AU 9512037	A	19950627	(199541)		
WO 9515928	A3	19950727	(199619)		
EP 733027	A1	19960925	(199643)	EN	
R: BE DE DK FR GB IT NL SE					
US 5664041	A	19970902	(199741)		
EP 801041	A2	19971015	(199746)	EN	16
R: BE DE DK FR GB IT NL SE					
JP 09508886	W	19970909	(199746)		42
EP 801041	A3	19971217	(199818)		
EP 733027	B1	19990331	(199917)	EN	
R: BE DE DK FR GB IT NL SE					
DE 69417572	E	19990506	(199924)		
AU 704774	B	19990506	(199929)		
US 2001002410	A1	20010531	(200131)		
US 6306924	B2	20011023	(200165)		
EP 801041	B1	20020814	(200255)	EN	
R: BE DE DK FR GB IT NL SE					
DE 69431195	E	20020919	(200269)		
JP 2005097110	A	20050414	(200527)		22

PRIORITY APPLN. INFO: **US 1994-298136 19940830; US 1993-163164 19931207; US 1995-425942 19950419; US 1995-568339 19951206; US 1997-965774 19971107; US 1998-137925 19980821**

AB WO 9515928 A UPAB: 19950727
A curable coating compsn. (I) for a glass substrate (II) comprises; (A) at least one of curable polymers (IIIa) oligomers (IIIb) and monomers (IIIc); and (B) a tetrasubstd. cpd. of formula (IV). Also claimed are : (A) a curable coating compsn. (V) for (II) which has an adhesion retention of 80% and comprises at least one of (IIIa) (IIIb) and (IIIc); (B) an outer prim. coating compsn. or matrix (VI) which comprises an acid functional ethylenically unsatd. monomer (VII); (C) a glass substrate coated with (I) and/or (VI): (D) a **coated optical fibre** having more than one **coating.** It has a dynamic fatigue nd of at

least 24; (E) **coated optical fibres** having more than one **coating.** The innermost layers comprise (IV) in both and at least one of the other layers comprises (VI) in one of the fibres and (IV) in the other; (F) a matrix which comprises (I); and (G) an **optical fibre** ribbon comprising at least one **coated optical fibre** embedded in a cured matrix material which comprises (IV) or (VII); In (I) A = Si, Ti or Zr; and X1-Z4 = hydrolysable gps. which can be hydrolysed from (III) in the presence of water.

USE - Coatings and matrices are claimed for glass optical fibres.

ADVANTAGE - Coated glass substrates have decreased deterioration due to moisture attack, improved adhesion with the coatings. With multiple layers there is also improved adhesion between layers.

L65 ANSWER 22 OF 34 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:314933 HCAPLUS
DOCUMENT NUMBER: 132:338268
TITLE: Method of fabricating a cylindrical **optical fiber** containing a particulate optically active **film**
INVENTOR(S): Kornreich, Philipp G.; Flattery, James; Keller, Douglas V., Jr.
PATENT ASSIGNEE(S): Syracuse University, USA
SOURCE: PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
WO 2000026711	A1	20000511	WO 1999-US25418		19991028	<--
W: CA, JP, KR						
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE						
US 6072930	A	20000606	US 1998-186309		19981104	
PRIORITY APPLN. INFO.:			US 1998-186309	A	19981104	<--

AB Methods of forming an optical fiber from a preform having a glass core surrounded by an outer glass cladding with a coating of a particulate optically active material between the core and cladding are described which entail providing a preform having a glass core having a viscosity which lies within a given preselected temperature range with a particulate coating of an optically active material over the surface of the core with the coating material having flow properties equal to or less than the viscosity of the glass core; and a glass cladding over the coated layer, with the glass having a similar viscosity which overlaps the viscosity of the glass core material and thermal coefficient of expansion compatible with that of the core; and drawing a fiber from the preform. The optical fibers are also described. The optically active material may be an inorg. material selected from metals, metal alloys, ferrites, magnetic materials, and semiconductors. The fibers produced may be used as Faraday rotators or polarizing fibers and optical isolators prepared using the fibers are discussed.

L65 ANSWER 26 OF 34 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:133250 HCAPLUS
DOCUMENT NUMBER: 130:172408
TITLE: TiO_2-**coated fiber optic cable** reactor
INVENTOR(S): Peill, Nicola J.; Hoffman, Michael R.
PATENT ASSIGNEE(S): California Institute of Technology, USA
SOURCE: U.S., 24 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
US 5875384	A	19990223	US 1996-654093		19960528	<--
US 6051194	A	20000418	US 1998-158412		19980922	<--
PRIORITY APPLN. INFO.:			US 1995-155P	P	19950612	<--
			US 1996-654093	A3	19960528	<--

AB A photochem. reactor system employing an optical fibers in the form of a cable to transmit light to solid-supported TiO_2 -containing photocatalyst is disclosed. Light energy is transmitted to TiO_2 -containing particles, chemical anchored onto one or more quartz fiber cores, via radial refraction of light out of each fiber. TiO_2 -containing coating layer minimizes the interfacial surface area of the quartz core and TiO_2 -containing particles and operation with incident irradiation angles near 90° enhance light propagation along the fibers. A maximum quantum efficiency of $\phi=1.1\%$ for the oxidation of 4-chlorophenol was achieved. Fiber efficiency permits the light source to be separated from the photocatalyst.

L65 ANSWER 27 OF 34 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:372695 HCAPLUS
DOCUMENT NUMBER: 129:47241
TITLE: Coated optical devices and methods of making the same
INVENTOR(S): Matsumoto, Roger Lee Ken
PATENT ASSIGNEE(S): Lanxide Technology Company, LP, USA
SOURCE: U.S., 8 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5761367	A	19980602	US 1996-696412	19960813 <--

PRIORITY APPLN. INFO.: US 1996-696412 19960813 <--

AB Methods for forming coated optical devices comprise providing at least one optical device (e.g., an optical fiber) and contacting at least a portion of at least one optical device with at least one coating composition comprising at least one metal-nitrogen polymer. The metal is preferably selected from Si, B, and Al. The at least one coating composition may further comprise at least one multifunctional organic electrophile comprising at least one monomer, oligomer, or polymer comprising a plurality of organic electrophilic substituents. The coating composition contacting at least a portion of an optical device is at least partially crosslinked, thereby forming coated optical devices which exhibit enhanced resistance to, for example, deterioration resulting from, among other things, exposure to chems. and environmental factors.

L65 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:599356 HCAPLUS
DOCUMENT NUMBER: 127:255030
TITLE: Coating system for glass adhesion retention
INVENTOR(S): Szum, David M.
PATENT ASSIGNEE(S): DSM Desotech, Inc., USA
SOURCE: U.S., 10 pp., Cont.-in-part of U. S. Ser. No. 163,164, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5664041	A	19970902	US 1994-298136	19940830 <--
CA 2178338	AA	19950615	CA 1994-2178338	19941206 <--
WO 9515928	A2	19950615	WO 1994-NL308	19941206 <--
WO 9515928	A3	19950727		
AU 9512037	A1	19950627	AU 1995-12037	19941206 <--
AU 704774	B2	19990506		
EP 733027	A1	19960925	EP 1995-903031	19941206 <--
EP 733027	B1	19990331		
JP 09508886	T2	19970909	JP 1995-516115	19941206 <--
EP 801041	A2	19971015	EP 1997-201989	19941206 <--
EP 801041	A3	19971217		
EP 801041	B1	20020814		
R: BE, DE, DK, FR, GB, IT, NL, SE				
US 2001002410	A1	20010531	US 1998-137925	19980821 <--
JP 2005097110	A2	20050414	JP 2004-289464	20041001 <--

PRIORITY APPLN. INFO.:

US 1993-163164	B2	19931207 <--
US 1994-298136	A	19940830 <--
EP 1995-903031	A3	19941206
JP 1995-516115	A3	19941206
WO 1994-NL308	W	19941206
US 1995-425942	B1	19950419 <--
US 1995-568339	B1	19951206 <--
US 1997-965774	B3	19971107 <--

OTHER SOURCE(S): MARPAT 127:255030

AB **Coated optical** glass **fibers** are described which are **coated** with ≥1 coating formulated from a composition comprising: ≥1 component selected from the group consisting of curable polymers, oligomers and monomers; and an adhesion promoter that is a tetrasubstituted compound having the formula AX1-4 (A = Si, Ti or Zr; X1-4 = hydrolyzable groups that can be hydrolyzed from the tetrasubstituted compound in the presence of water; and A is also present in the composition of the optical glass fiber). The introduction of the tetrasubstituted compound acts to delay the rate of deterioration of the optical fiber due to moisture, and improves adhesion between the glass substrate and the coating composition The introduction of the tetrasubstituted compound into a polymeric coating composition also improves the interlayer adhesion when more than one coating is applied to a glass substrate. Optical fibers are also described which are provided with an outer primary coating composition or matrix material that comprises an acid functional ethylenically unsatd. monomer.

L65 ANSWER 29 OF 34 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:681398 HCAPLUS
DOCUMENT NUMBER: 125:307136
TITLE: Corrosion-resistant optical fibers and waveguides
INVENTOR(S): Chan, Maureeen Gillen; Inniss, Daryl; Katz, Howard Edan; Kuck, Valerie Jeanne; Schilling, Marcia Lea
PATENT ASSIGNEE(S): AT and T Corp., USA
SOURCE: Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
EP 735395	A2	19961002	EP 1996-301906		19960320	<--
EP 735395	A3	19970205				
R: DE, FR, GB, NL						
JP 08271769	A2	19961018	JP 1996-75531		19960329	<--
US 5904983	A	19990518	US 1997-862403		19970523	<--
PRIORITY APPLN. INFO.:			US 1995-412787	A	19950329	<--

AB The **optical fibers** comprise a protective **layer** doped with metal oxides, and the protective layer delivers the metal oxides to the outer surface of the cladding forming a thin quasi metal oxide film between the protective layer and the cladding. The resulting film retards corrosion by blocking the environmental fluids from reacting with the cladding of the fibers, and the mech. performance and reliability of the optical fibers are improved. The process can also be applied to waveguides.

L65 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:928324 HCAPLUS
DOCUMENT NUMBER: 123:347913
TITLE: Radiation-curable coating material compositions for glass substrates, the coated glass substrates obtained, especially **multilayer-coated optical fibers**, and matrix materials, and optical fiber ribbons embedded in the matrix materials
INVENTOR(S): Szum, David M.
PATENT ASSIGNEE(S): DSM N.V., Neth.
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
WO 9523772	A1	19950908	WO 1995-NL77		19950302	<--
W: AU, CA, JP						
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE						
US 5502145	A	19960326	US 1994-204993		19940302	
CA 2184607	AA	19950908	CA 1995-2184607		19950302	<--
AU 9517191	A1	19950918	AU 1995-17191		19950302	<--
AU 693856	B2	19980709				
EP 748301	A1	19961218	EP 1995-909136		19950302	<--
R: BE, DE, DK, FR, GB, IT, NL, SE						
JP 09509642	T2	19970930	JP 1995-522830		19950302	<--
US 5595820	A	19970121	US 1995-484650		19950607	<--
PRIORITY APPLN. INFO.:			US 1994-204993	A	19940302	<--
			WO 1995-NL77	W	19950302	

AB The compns., comprising ≥1 siloxane components selected from radiation-curable polymers, oligomers, and monomers, contain polysiloxanes having general formula Y[Si(X1)(X3)O]nSi(X2)(X4)Z (independently, Y, Z = halogen, amino, alkyl, alkoxy; n = ≥1; independently, X1-4 = hydrolyzable group). At least the innermost **layer** of the **multilayer-coated optical fibers** comprises the siloxanes as above and ≥1 of the other layers comprises an acid-functional monomer. The coating compns. delay the rate of deterioration of the glass or optical fibers by to moisture, and improve adhesion to the glass substrates. The siloxanes also improve interlayer adhesion. A composition contained 2-hydroxyethyl acrylate-isophorone diisocyanate-(Permanol KM 10-1733)2.33-isophorone diisocyanate-2-hydroxyethyl acrylate (Permanol KM 10-1733 is a carbonic acid polymer with alkanediols) 43.2, ethoxylated nonylphenol acrylate 28.35, octyl decyl acrylate 10.8, phenoxyethyl acrylate 4.5, Irganox 1035 [1-tetrakismethylene(3,5-di-tert-butyl-4-hydroxyhydrocinnamate)methane] 0.45, and Dow Corning 1-6184 (siloxanes) 10 weight%.

L65 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:354713 HCAPLUS
DOCUMENT NUMBER: 122:200791
TITLE: **Optical fibers** with a light absorbing **coating**
INVENTOR(S): Fischietto, Frederick J.; Jones, Ralph E.; Wilcox, Steven W.; Zetter, Mark S.
PATENT ASSIGNEE(S): UOP Inc., USA
SOURCE: U.S., 4 pp. Cont.-in-part of U.S. Ser. No. 104,515. CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
US 5381505	A	19950110	US 1993-174094		19931228	<--
PRIORITY APPLN. INFO.:			US 1993-174094	A2	19931228	<--
			US 1993-104515		19930809	<--

AB **Optical fibers** having one or more polymeric **coatings** are described which incorporate at least one light-absorbing component (e.g., particulate amorphous carbon) in a coating. The light absorbing component is placed in a coating between the primary **cladding** of the **optical fiber** and the secondary **cladding.** The light-absorbing components act to reduce extraneous light arising either as incident light from outside the optical fiber or as light escaping the fiber at bends and being reflected back into the fiber by a coating acting as a secondary cladding.

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File 2:INSPEC 1969-2005/Aug W1
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Ref	Items	Type	RT	Index-term
R1	33077		34	*OPTICAL FIBRES (January 1977)
R2	691	F	2	FIBER BRAGG GRATINGS
R3	4	F	1	FIBER OPTICAL WAVEGUIDES
R4	186	F	2	FIBRE BRAGG GRATINGS
R5	13	F	1	FIBRE OPTICAL WAVEGUIDES
R6	3619	F	1	OPTICAL FIBERS
R7	7137	O	4	FIBRE OPTICS (January 1969)
R10	55911	T	38	WAVEGUIDES (January 1969)
R11	55354	B	12	FIBRES (January 1969)
R13	2058	N	15	OPTICAL FIBRE CLADDING (January 1995)
R16	3899	N	15	OPTICAL FIBRE FABRICATION (January 1993)
R25	1882	R	11	GLASS FIBRES (January 1977)
R27	4832	R	14	OPTICAL CABLES (January 1985)
R28	12853	R	16	OPTICAL FIBRE COMMUNICATION (January 1995)
R34	14036	R	4	CC=A4281 Fibre optics & fibre waveguides
R35	58589	R	16	CC=B4125 Fibre optics

Set	Items	Description
S1	147616	R1:R7 OR R10 OR R11 OR R13 OR R16 OR R25 OR R27:R28 OR R34:R35

Ref	Items	Type	RT	Index-term
R1	15498		11	*NANOPARTICLES (January 2003)
R2	582	F	1	NANOPOWDERS
R3	42557	O	24	NANOSTRUCTURED MATERIALS (January 1993)
R4	707619	T	56	MATERIALS (January 1969)
R5	7917	R	13	MAGNETIC PARTICLES (January 1995)
R6	8903	R	8	METAL CLUSTERS (January 1977)
R7	5716	R	8	NANOCOMPOSITES (January 2003)

S2	55998	R1:R3 OR R7

Set	Items	Description
S1	147616	R1:R7 OR R10 OR R11 OR R13 OR R16 OR R25 OR R27:R28 OR R34:R35
S2	55998	R1:R3 OR R7
S3	992	1AND2
S4	0	S3 AND (HYDROPHIL?????? OR HYGROSCOP???????)(4N)(COAT?????-?? OR OVERCOAT???? OR TOPCOAT?????? OR PROTECT?????)
S5	43	S3 AND (FIBER??????? OR FIBRE???????)(4N)(COAT??????? OR O-VERCOAT???? OR TOPCOAT?????? OR PROTECT?????)
S6	0	S5 AND (HYDROPHIL?????? OR HYGROSCOP???????)
S7	2	S5 AND (WATER OR MOISTURE OR HUMID?????????)

7/9/2

DIALOG(R)File 2:INSPEC

7082769 INSPEC Abstract Number: A2001-24-4281C-004, B2001-12-4125-078

Title: New silica **optical fibers with nano porous silica cladding/coating**

Author(s): Skutnik, B.J.

Author Affiliation: Fiber Opt. Fabrications Inc., East Longmeadow, MA,

Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.4215 p.44-52

Publisher: SPIE-Int. Soc. Opt. Eng,

Publication Date: 2001 Country of Publication: USA

CODEN: PSISDG ISSN: 0277-786X

SICI: 0277-786X(2001)4215L.44:SOFW;1-2

Material Identity Number: C574-2001-155

U.S. Copyright Clearance Center Code: 0277-786X/2001/$15.00

Conference Title: Optical Fiber and Fiber Component Mechanical Reliability and Testing

Conference Sponsor: SPIE

Conference Date: 6-7 Nov. 2000 Conference Location: Boston, MA, USA

Abstract: A new type of optical fiber has been developed with all pure silica in both core and cladding. The cladding is a nano porous silica produced on line from an oligimeric organo-silicate by a modified sol-gel technology. Characteristics, mainly mechanical properties, are described. The strength and fatigue of these optical fibers are very good, even without additional protective jackets. The nano porous silica is also being evaluated as an outer **coating** on all silica optical **fibers**.
Unjacketed fibers have mean Weibull strengths in bending of 6.5 to 7.6 GPa with Weibull slopes in the 40 to 60 range. Strength decrease with decreasing strain rate is similar for both jacketed and unjacketed fibers. Static fatigue results using mandrel wrap tests are also presented. Dynamic and static fatigue parameters appears to be essentially the same with values around 20. A thin polyimide jacket does improve some of the mechanical properties. Results for nano porous silica `buffer' over a silica/fluorosilica core clad structure are also presented. **Effects of water and dry environments are presented, including results of short to intermediate term aging in boiling water**. Possible mechanisms to explain the strength and fatigue behavior are discussed in light of these fibers' unique structure. (21 Refs)